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Issue	2
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Level 2

Signalling Scope of work for Switch and Crossing Renewal Projects

Endorsement & Authorisation

Endorsed by:

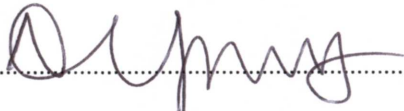


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Issue record

Issue	Date	Comments
Issue 1	Dec 2006	First Issue
Issue 2	26/08/2008	Updated to reflect Phase 2A / Engineering reorganisation responsibility change, no technical changes.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 26 August 2008.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

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1 Purpose

The purpose of the Level 2 document is to define the minimum signalling requirement for S&C Renewal or Recovery Projects and that S&C delivery teams are provided with clear direction. Changes in materials, historic practices and other safety initiatives mean that “like for like” may not meet the company’s objectives for safety and reliability. This process is to be applied to all S&C Renewals and Recoveries.

2 Scope

This Level 2 document does not supersede the requirements to comply with the Railway Interoperability Regulations which may require extra provisions to be made over and above the minimum, technical requirements stated here. Approval of the work is to be in accordance with the Railways and Other Guided Transportation Systems (Safety) Regulations 2006 and Network Rail procedures.

3 Reference documentation

<u>GI/RT7006</u>	Prevention and Mitigation of Overruns – Risk Assessment
<u>NR/GN/SIG/00028</u>	General Guidelines on train protection & the provision of signalling
<u>NR/L2/SIG/14201</u>	Prevention and Mitigation of Overruns – Risk Assessment of Signals
<u>NR/L2/SIG/11115</u>	Correlation of signalling records
<u>NR/GN/SIG/11116</u>	Assessment of signalling systems before design alterations
<u>NR/GN/SIG/11210</u>	Signalling Installation

4 Definitions

ALARP	As Low as Reasonably Practicable
ATP	Automatic Train Protection
AWS	Automatic Warning System
S&C	Switch & Crossing
SAT	Signal Assessment Tool
SICA	Signalling Infrastructure Condition Assessment
SOD	Safe Overrun Distance
SPT	Signal Post Telephone
SSI	Solid State Interlocking

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TASS	Tilt Authorisation and Speed Supervision
TD	Train Describer
TPWS	Train Protection and Warning System
UTX	Undertrack Crossing

5 Executive Summary

The approach to a S&C Renewal Project (which includes the elimination of redundant assets), from a signalling point of view, will depend on the nature of the renewal and the effects on the existing infrastructure, its safe operation and the condition of that infrastructure.

If the junction is being re-modelled, then the project should allow for the renewal of mechanisms, control equipment, alterations to train protection arrangements and application of the robust train protection Principals.

In other situations only those alterations directly consequential on the renewal of the asset, its changed dimensions or materials would normally be included within the project (subject to the asset being safe to be altered/re-used).

The Renewal Project may be categorised, in order of complexity, as:-

- Like for Like (in both Track and Signalling terms),
- Modern Equivalent Form (where track or point mechanism is updated to current practice)
- Minor Alterations (where the position, size or speed of the layout is changed, or where redundant S &C is recovered), or
- Re-modelling (where the layout is altered in terms of facilities and arrangement).

(The definition of “like for like” typically differs between the signalling and track disciplines and the impact on signalling of even a small movement needs to be evaluated at an early stage).

Where signalling assets do not require to be altered but have previously been identified as being due for renewal, then it may be advantageous to combine the works.

It will not be normal to retrospectively correct compliance issues or apply robust train protection Principals unless other works are being undertaken which enable such changes to be cost effective.

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Where there is a previously identified significant safety issue which needs correction, then this should be considered for inclusion in the works even if it would not otherwise be included.

The responsibility for funding the S&C Renewal (the primary asset) and the signalling works (the secondary asset) directly consequential on that renewal or recovery is with the track renewals project.

Any works associated with speed increase or increased operational flexibility (or utilising the opportunities arising from the renewal) will be an enhancement and subject to a business case.

Signalling renewals and significant safety enhancements not directly consequential will require funding from the signalling renewals budget or require a business case to be made. Recoveries of signalling equipment associated with S&C which has been removed prior to the issue of this procedure and where Network Change has been previously agreed will be funded from the signalling renewals budget.

Where there may be “whole life” savings (in terms of reliability, performance and safety) to undertake renewals and changes at the same time as works on the primary asset it is the responsibility of the discipline engineers to co-ordinate the work plans and identify other sources of funding.

6 Layout Risk Management

The results of the current layout risk assessment in accordance with GI/RT7006 should be reviewed and where significant items of risk have been identified, these should be considered for inclusion within the works, funded accordingly.

Where no assessment has been previously made of the layout, then one is required to act as a baseline for the proposed changes and to identify whether any safety issues need to be addressed.

The removal of trap points, for example, which appear to be redundant is likely to remove an overrun protection feature from the layout and may require other measures, such as robust train protection, to be applied over a significant area.

A review, guided by the SAT score, shall be undertaken by the Principal Renewal & Enhancement Engineer (Control & Coms) and relevant Operations Manager or Schemes Specialist to demonstrate that the resultant layout is acceptable.

6.1 Remodelling projects

For remodelling projects, the layout risk of the junction is to be assessed in accordance with GI/RT7006 and NR/L2/SIG/14201. Guidance for management of the identified risks is contained in NR/GN/SIG/00028.